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RADIOGRAPHIC EVALUATION OF VAGINAL AXIS AND POSITION OF THE APEX FOLLOWING 3 TECHNIQUES FOR VAGINAL VAULT SUSPENSION

Hypothesis / aims of study

To radiographically compare the vaginal axis and position of the vaginal apex following abdominal sacro-colpopexy (ASCP), bilateral sacrospinous fixation (BSSF), and posterior intravaginal slingplasty (PIVS) to normal controls.

Study design, materials and methods

Women who had successfully (POP-Q stage 1 or 0) undergone ASCP (5), BSSF (5), or PIVS (4) and 5 normal controls underwent lateral barium gel vaginograms in the supine and standing positions, and at rest and with maximum straining. On the images, lines were drawn through the mid upper and lower vaginal segments, and from the coccyx to the inferior pubic symphysis (Pubococcygeal line - PCL). The upper vaginal axis was compared to the PCL and the vertical distance from the vaginal apex to the PCL was measured using a radiographic ruler. Kruskal-Wallis tests were used to analyze the data.

Results

There was no significant difference in upper vaginal axis between the groups, although ASCP resulted in a more vertical vagina, relative to PIVS and BSSF which were more horizontal, in that respective order. In the supine rest position, the location of the vaginal apex in relationship to the PCL did not differ between the four groups ($p = 0.26$), and the mean position of the apex was superior to the PCL. In the supine straining, standing rest, and standing straining positions, the apex was significantly inferior to that of normal controls ($p = 0.048$, $p = 0.003$, and $p = 0.003$ respectively). With standing straining, the mean position of the apex was superior to the PCL in the normal controls and the ASCP groups, and it was inferior to the PCL in the SSF and the PIVS groups.

Interpretation of results

Radiographically, the upper vaginal axis appears to be similar in women who undergo ASCP, BSSF or PIVS, although the ASCP axis is somewhat more vertical and the PIVS and BSSF more horizontal, respectively. The location of the vaginal apex following ASCP, BSSF, and PIVS, appears to approximate normal position in the supine rest position. However, even in patients with excellent anatomic surgical outcomes, the position of the apex is significantly different with standing and straining, and in many patients, dropped inferior to the PCL.

Concluding message

Successful vaginal vault prolapse correction procedures result in a similar vaginal axis. While the apex may be normally positioned at rest, with exertion, most patients have persistent perineal descent resulting in descent of the vaginal apex below the puboccygeal line.

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